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IN THE

Supreme Court of the United States

October Term, 1958

No. 832

WILLIAM DUBILIER,

Petitioner,

vs.

THE UNITED STATES.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF CLAIMS

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No.

WILLIAM DUBILIER,

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THE UNITED STATES.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF CLAIMS

Petitioner, William Dubilier, prays that a writ of certiorari issue to review the judgment of the United States Court of Claims entered in the above entitled case on January 14, 1959.

Opinion Below

The Opinion of the Court of Claims is reported at 169 F. Supp. 489.

Jurisdiction

The judgment of the Court of Claims was entered on January 14, 1959. The jurisdiction of this Court is invoked under 28 U. S. C. 1255.

Questions Presented

1. Where a complex technical invention took six days of expert testimony of skilled electrical engineers, directed exclusively to validity and infringement, must the Court as a matter of law accept undisputed testimony or may it conclude non-infringement on "facts" of its own knowledge outside the record and contrary to the undisputed testimony.

2. Did the Court below err in law in evading judgment on patent invalidity.

Statutes Involved

Article I, Sec. 8 of the Constitution of the United States, relating to granting of patents and Title 28 U. S. C. 1498, relating to reasonable compensation for unlicensed use of a patented invention, are here involved.

Statement

The Geffcken et al. patent 1,898,046 (hereinafter referred to as Geffcken) here involved, is for a "thyratron" i.e., a gas filled tube used for switching electrical currents on and off. It effects this switching by an involved technical phenomenon known as "ionization" of the gas in the tube. When the gas is not "ionized", the tube does not conduct. When the gas is "ionized", the tube conducts electricity.

The thyratron has become an important electrical device, widely used in industry and in military devices. The Radio Corporation of America paid $300,000 for license rights from Petitioner for about 300 patents, including this patent here in suit. The American Telephone & Telegraph Company also purchased a license for a similar large sum

(R. 19, Exhibits 1, 9)*. These 300 patents (including the patent here chosen by Petitioner to test all the patents) will by stipulation with respondent be licensed free to the Government if as a result of this litigation the Government pays for its use of the Geffcken patent.

The trial lasted six days during which eight witnesses testified, all of them electrical engineers, specialists in the field of this invention.

Petitioner presented undisputed testimony of electrical engineers expert in this field that the Geffcken patent was the first to teach how to make a successful thyratron (R. 550), after fruitless years of effort to produce a thyratron by General Electric engineers (R. 74, 75, 79) such as Langmuir, Nobel Prize Winner (Patent 1,289,823), and Peter Cooper Hewitt (Patent 1,402,931) etc. Both Plaintiff's and Defendant's experts agreed that these prior attempts at a thyratron had serious practical limitations (R. 452, 504, 511). Immediately following the disclosure of the Geffcken thyratron, the industry published papers thereon and proceeded to manufacture thyratrons.

Respondent first presented thirty-nine prior art citations, but at the trial relied on fifteen of these patents. It sought to show invalidity by different combinations of these patents. The Commissioner found invalidity by his own combinations, not established at the trial.

The Commissioner found the patent invalid:

1. On new matter (arc) in Figure 3 of the patent (Commissioner's Finding 10), but Defendant presented no testimony on this with respect to Figure 3. Plaintiff's undisputed technical testimony was that Figure 3 must inherently arc.

2. Incomplete disclosure (Commissioner's Finding 11) —but the only testimony (in this instance by both Plaintiff

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*R. refers to the pages in the record of the testimony.

and Defendant R. 203-208, 216-223, 335) was that the patent disclosure is complete.

3. On several combinations of references (Commissioner's Findings 28, 29, 30, 31, 32, 33)—but there was no testimony on those particular combinations selected by the Commissioner.

4. The Commissioner found the patent non-infringed (Commissioner's Finding 36), but the undisputed testimony showed each element of the claim in the accused structure . . .

In none of these Findings did the Commissioner refer to the record for support when he made Findings contrary to the undisputed testimony.

Accordingly, Plaintiff urged in his brief below that if the Court adopts the Commissioner's Findings, it should refer to the record for support: that in the alternative, these created issues of law, namely that in this technical art the Commissioner as a matter of law must adopt the undisputed testimony.

The Court in its opinion said it was "unnecessary to consider such (validity) issues in our disposal of this litigation", page 5, last lines of the opinion; i.e. it did not consider the first three groups above dealing with validity because it found the patent non-infringed.

In so simplifying the issue to a single infringement issue, the Court did not refer to the record to support its holding on infringement; did not show how it arrived at "facts" contrary to the undisputed testimony; nor did it discuss the issue of law thus raised by Petitioner.

REASONS FOR GRANTING THE WRIT

ISSUE 1

Where a complex technical invention took six days of expert testimony of skilled electrical engineers, directed exclusively to validity and infringement, must the Court, as a matter of law, accept undisputed testimony, or may it conclude non-infringement on "facts" of its own knowledge outside the record and contrary to the undisputed testimony?

(1) It is elementary that where there is conflicting fact testimony, it is the Court's task to evaluate the relative merit of such testimony. A party may disagree, but he is bound by the relative weight the Court has placed on such conflicting testimony.

Here, however, Plaintiff predicated its entire case on the ground that there is no conflicting testimony to compare.

We submit the following example: In concluding non-infringement, the Court must refer to at least one element of the claim not found in the accused structure. Thus, the Court found that the structure does not respond to the specific recital of claim 18

> "which specifically recites a potential means in the output circuit for alternately starting and stopping the electrical discharge in said device." (p. 3, lines 23 to 27)

But the only testimony is:

> "Q. Do you find potential means in said output circuit for alternately starting and stopping the electrical discharge in said device? A. Yes. . . . The cojoint action of the shunt condenser 121 and the series resistor R-119 effectuates the alternate starting and stopping of the discharge tube V-107 during its firing state, namely, when the tube would tend to

> or want to conduct, it is alternately interrupted by those two elements I just stated, C 121 and R 119 which, incidentally, is done in a manner to also create a pulse signal through transformer T 10[illegible] primary, which in turn actuates the upper portion of the circuit, Figure C-1, as the Government witness yesterday very clearly and ably set forth." R. 146, 147

If there is testimony disputing the above testimony and supporting the Court's Finding that the accused structure "does not respond to the specific recital of Claim 18 (p. 3, line 9 from bottom)", it will be a simple matter for Defendant to refer to such testimony. However, when previously challenged to do so, Respondent substituted a debate, based on his erroneous "facts", for the absence of testimony.

(2) It was no inadvertence that the Court did not undertake in its twenty-six page opinion to show error by Plaintiff by referring to the record for support of its "facts", although Plaintiff made the Court's inability to do so a major issue in its brief below.

The Court

(1) could not rely on or refer to Defendant's testimony, for Defendant introduced no testimony in support of the "facts" relied on by the Court.

(2) could not refer to Plaintiff's testimony, since this testimony presented facts directly contrary to those relied on by the Court.

Neither the Commissioner nor the Court, despite their sole reliance on their own technical knowledge in this specialized field, tried to establish themselves as experts in the specialized field of thyratrons.

On the other hand, trained engineers, specifically skilled in this field, did testify for six days. Plaintiff presented the testimony of (1) an electrical engineer who has spent his entire professional life of twenty-five years in the spe-

cial field of this invention, and is presently employed as Chief Engineer; (2) a former University of Pennsylvania professor of electrical engineering, author of four authoritative technical books including the subject of the present invention and whose experience in the field of this invention goes back to before the 1920's; (3) an electrical engineer and patent expert of twenty years experience; and (4) three electrical engineers, employed by the United States Government in the use of the arc discharge tubes (thyratrons) here in issue. These three engineers were suggested by the Government as working on thyratrons. They were, therefore, subpoenaed.

Defendant presented the testimony of: (5) an electrical engineer employed by the Government in the field of the thyratrons here in issue; and (6) a distinguished retired Navy Captain who is also an electrical engineer and a well known patent expert.

We cite here this formidable group of highly qualified technical witnesses for, incredible as it may seem, this Court will study the Commissioner's Findings and the Court of Claims decision in vain for a single use of or reference to the facts of validity and infringement developed by any of these witnesses.

(3) The Court did not find the element missing by "evidence" presented at the trial disputing Plaintiff's testimony.

The Court therefore to conclude non-infringement had to find as "facts" that this element is not present in defendant's thyratrons, on "evidence" other than that presented at the trial.

Plaintiff was not confronted with such "evidence" and so has been denied his right of cross-examination of the "testimony" on which these "facts" are based.

What is said in the above example on "potential means • • • " testimony applies equally well to the remaining por-

tions of the opinion. However, it is not necessary to go further here to other claims, for to establish infringement it is sufficient if one claim is infringed.

(4) Although the Court in concluding non-infringement states on Page 3, lines 19-25: "We find it unnecessary to consider such (validity) issues in our disposal of this litigation", the Court went on to adopt the Commissioner's Findings on invalidity.*

As to these Findings, Plaintiff also submitted in its brief below, issues of law predicated on the undisputed testimony of Plaintiff and the absence of any instance of testimony by Defendant in support of these Findings.

One such issue of law was stated as follows:

1. Where a patentee's drawings show circuit diagrams which, by undisputed testimony supported by basic laws of physics inherently must operate as arc discharge, does it render his patent invalid for "new matter" when he amends his specification to recite "arc discharge" (raised with respect to Finding 10, page 16 of the Court's decision)?

In support of this issue of law, Plaintiff-petitioner cited *Eames* v. *Andrews*, 122 U. S. 55-56; *Safway Steel Scaffolds Co. of Wisconsin* v. *The Patent Scaffolding Company*, 110 2d 108 (cert. denied 311 U. S. 671); *Nichols* v. *Minnesota Mining & Mfg. Co.*, 109 F. 2d 162, where the Court called attention to the Supreme Court language:

> "It is a method and device which may be patented and not the scientific explanation of their operation. DeForest Radio Co. v. General Electric Co., 283 U. S. 664, 684-685."

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* It is now more than fifteen years since this Court has granted certiorari from the Court of Claims on a suit dealing with validity and infringement questions, the last such case being *Marconi Wireless* v. *U. S.*, decided June 21, 1943, in an opinion written by Justice Stone.

In adopting this Finding, the Court does not make any mention of this sole legal ground raised by Petitioner.

The issue here is not whether the Court's evaluation of the facts established by testimony is correct, but rather whether undisputed testimony in a complex technical invention is not binding on the Court.

That there is undisputed validity and infringement testimony here is established by the failure of the Court or the Defendant in response to Petitioner's challenge to indicate where in the record there is such disputing testimony.

As Petitioner has shown, all that Respondent need do to overcome the basic argument here is to refer to at least a word of testimony by Defendant's experts to the effect that there is not in the Government devices a "potential means in said output circuit for alternately starting and stopping the electrical discharge in said device".

The Law on Undisputed Testimony.

The general rule in the Federal Courts is that uncontradicted testimony, not impeached or discredited in any way respecting plain and simple facts, ordinarily must be accepted as true. A cogent statement of the rule citing *Kelly v. Jackson*, 6 Pet. 622, 631, is found in *George* v. *Capital Traction Co.*, 295 Fed. 965 at 968 stating:

> "• • • Where the testimony is all one way, and not immaterial, irrelevant, improbable, inconsistent, contradicted or discredited, such testimony cannot be disregarded or ignored by judge or jury, and if one or the other makes a finding which is contrary to such evidence, or which is not supported by it, an error results for which the verdict or decision, if reviewable, must be set aside • • •.
>
> To hold otherwise would vest triers of the facts in cases subject to review with authority to disregard the rules of evidence which safeguard the liberty and estate of the citizen."

See also: *Cullers* v. *Commissioner*, 237 F. 2d 611 (C. C. A. 8th, 1956); *Estate of Fitts* v. *Commissioner*, 237 F. 2d 729 (C. C. A. 8th, 1956); *Planters Operating Co.* v. *Commissioner*, 55 F. 2d 583 (C. C. A. 8th, 1932); *Capitol-Borg Dry Cleaning Co.* v. *Commissioner*, 131 F. 2d 712 (C. C. A. 6th, 1942); *Pittsburgh Hotels Co.* v. *Commissioner*, 43 F. 2d 345 (C. C. A. 3d 1930); *Boggs* v. *Buhl, Inc.* v. *Commissioner*, 34 F. 2d 859 (C. C. A. 3d 1929); *Diamond Alkali Co.* v. *Heiner*, 60 F. 2d 505 (C. C. A. 3d 1932); *Ansley* v. *Commissioner*, 217 F. 2d 252 at page 256.

In *Loesch & Green Construction Co.* v. *Commissioner*, 211 F. 2d 210 (C. C. A. 6th, 1954), the Court reversed the Tax Court which failed to accept the uncontradicted testimony of experts as to reasonableness of salaries. The Court stated at page 212:

> "Their testimony was unimpeached and should have been accepted by the Tax Court in a matter in which it had no knowledge or experience upon which it could exercise independent judgment; and such evidence cannot be arbitrarily disregarded * * *. Petitioner's witnesses were qualified, unimpeached and no evidence was given to the contrary. Their testimony should have been accepted."

Petitioner submits this rule is particularly apt where, as here, the testimony is technical and experts fail to dispute the testimony.

ISSUE 2

Did the Court below err in law in evading judgment on patent invalidity.

This Court in *Sinclair and Carroll Co.* v. *Interchemical Corp.*, 325 U. S. 327, decided 1945, in approving the practice of the District Judge in passing on both validity and infringement said:

> "There has been a tendency among the lower federal courts in infringement suits to dispose of them

> where possible on the ground of non-infringement without going into the question of validity of the patent. Irwin v. Buick Motor Co., 88 F. 2d 947, 951; Aero Spark Plug Co. v. B. G. Corp., 130 F. 2d 290; Franklin v. Masonite Corp., 132 F. 2d 800. It has come to be recognized, however, that of the two questions, validity has the greater public importance, Cover v. Schwartz, 133 F. 2d 541, and the District Court in this case followed what will usually be the better practice by inquiring fully into the validity of this patent."

Since this decision, some of the Circuits have followed this rule, usually giving the same and further reasons. Thus, the Ninth Circuit Court of Appeals, remanding a case to the District Court for an opinion on validity, in *Helbush* v. *Finkle* (CA 9), 170 F. 2d 41, said in citing the above Supreme Court case:

> "Usually where the question of validity is raised in a patent infringement case, the District Court should determine that question before determining the question of infringement. That of course should have been followed in this case."

It went on to say:

> "There may be cases in which non-infringement is so apparent as to make it unnecessary to determine the question of validity. This, however, is not such a case."

See also *Vischer Products Co.* v. *National Pressure Cooker Co.* (CA 7), 178 F. 2d 125; *W. F. & John Barnes Co.* v. *International Harvester Co.* (D. C. N. Ill.), 51 F. Supp. 254; *Madison Patent Corp.* v. *Harry Williams Mfg. Co.* (D. C. N. Ill.), 87 F. Supp. 87; *Sunlite Mfg. Co.* v. *Claravan* (D. C. E. Wis.), 73 F. Supp. 938; *Avery* v. *Ever Ready Label Corp.* (D. C. N. J.), 104 F. Supp. 913; *Lyons* v. *Construction Specialties Inc.* (D. C. N. J.), 112 F. Supp. 317.

On the other hand, a District Court Judge of Northern Illinois in *Brunswick-Balke-Collender Co.* v. *Kuehne Mfg. Co.*, 110 U. S. P. Q. 481, felt that "generally it is a good rule not to consider validity unless infringement is found". See also *Paley* v. *Bethlehem Steel Co.* (DC Mass.), 114 F. Supp. 579.

The Court of Claims also does not follow the Supreme Court rule, *supra*. In *Ferguson* v. *U. S.*, 65 F. S. 580, the Court of Claims said:

> "Since there is no infringement, it is unnecessary for the Court of Claims to discuss validity."

In the instant case the Court of Claims, concluding non-infringement, finds it unnecessary to consider such validity issues "in our disposal of this litigation", Opinion page 5, line 23.

When competent patent counsel is asked for an opinion on infringement, it is the practice to first determine from the prior art the scope of the invention. Only thus can a reasonably accurate evaluation of infringement be made by patent counsel skilled in this field. Here the Court found that the Government thyratrons do not have potential means in said output circuit for alternately starting and stopping the electric discharge.

Had the Court considered validity, it would have learned from examining the prior art that this feature indeed is not new with Plaintiff's patent: it is and has been an inherently necessary element in all gas arc discharge tubes.

While it may be possible, as the courts have stated, to determine infringement without first considering validity, this is only possible in a very simple device. It has never been found possible by patent counsel in a complex and highly technical device. It would hardly seem possible for a Judge to pass on infringement without first considering validity in so complex a device as a thyratron. Moreover,

the considerations of validity include the facts which must be known in determining infringement.

Moreover, if this Court in reviewing this Petition concludes there is merit here, it may remand this case to the Court below for an opinion on validity thus repeating the work the Court has already gone through, to say nothing of the work and cost to the parties here involved.

It is respectfully submitted that:

1. The precedent here established that a defendant need not assume any burden after plaintiff has made a word for word application of the claim to the infringing device; that defendant need not subject its witnesses to cross-examination by introducing testimony disputing Plaintiff's fact testimony, relying solely on establishing "facts" by debate in its brief after the trial, is a denial of Plaintiff's judicial right to a trial on the facts.

2. The growing practice of passing on infringement without first considering validity can, and in technical inventions often does result in a miscarriage of justice. This has happened here where the Court found that an element without which a thyratron cannot work, was for some unknown reason not used by the Government thyratron, although undisputed testimony was presented that the element is present.

It is respectfully petitioned that the writ of certiorari be granted.

Respectfully submitted,

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APPENDIX

(Word for word application of Claim 18 as taken directly from the testimony, pages 144-148 inclusive.)

Q. Now, Mr. Marsen, I hand you Plaintiffs' Exhibit No. 3 and I also hand you Plaintiffs' Exhibit No. 2 and now in connection with Plaintiffs' Exhibit No. 3 and Plaintiffs' Exhibit No. 2, which is the response of the Air Force to Plaintiffs' call, I would like you to consider as a sample claim, Claim 18, and as I read the elements of Claim 18 I would like you to apply it to Plaintiffs' Exhibit No. 3 and to Plaintiffs' Exhibit No. 2.

Did you have anything to do with the preparation of the drawings shown on Plaintiffs' Exhibit No. 3? A. Yes, I laid out the diagram as close and exact as I could from the corresponding portions of the Exhibit No. 2 and a draftsman prepared it therefrom.

Q. Now, considering both Plaintiffs' Exhibit No. 2, and Plaintiffs' Exhibit No. 3, do you find in them an electrical system comprising an input circuit carrying weak controlling currents? A. Well, I find many but I would like to refer to Figure G-2 of Exhibit No. 3 as a typical application unless you want more. I am looking for that exact tube now, V107.

Q. Does the Court appreciate now I am reading Claim 18?

Commissioner Lane: Yes.

The Witness: That shows that that corresponds to this figure here. There are many more like it but I see the same lettering and legends as appear on Figure G-2 of Exhibit No. 3, which would make it easier to follow and record.

By Mr. Ostrolenk:

Q. Do you find an output circuit to carry heavy controlled currents in these Exhibits Nos. 2 and 3? A. Well, we have in tube V107 the circuit of Figure G-2 and is the portion of the main system of Exhibit No. 2, and the elec-

trical system therein has the tube V107 with its input and output circuits, and when a gaseous tube is involved or as the corresponding tracing through of such circuits would show and does show, there are the weak currents in the input and the heavy currents which are controlled thereby in the output of the tube V107.

A portion of the Exhibit No. 2 indicated and drawn as a portion of Figure G-2 of Exhibit No. 3 corresponds to such system with the weak input and the output controlled currents.

Q. Do you find an electrical discharge device filled with a gaseous atmosphere in these two exhibits? A. Yes, the V107 is such a gaseous atmosphere device and electrical discharge device. It is type 5727 as indicated on both exhibits, and the conventional dot confirms the statement.

Q. Confirms the statement that it is filled with gaseous atmosphere? A. Confirms my statement, yes.

Q. Do you find main electrodes situated within said device and connected in said output circuit? A. Yes, the main electrodes are the cathode connected to terminal 2 of tube V107, and the anode of plate connected to plate terminal 6, which terminals 2 and 6 are not indicated on Exhibit No. 3 but appear on Exhibit No. 2.

The output circuit includes the pulse transformer primary T101P, and the anode is connected with the cathode to such output circuit.

Q. Do you find potential means in said output circuit for alternately starting and stopping the electric discharge in said device? A. Yes. The operation of the gaseous discharge tube V107 connected to the DC supply line which extends from 550 and actually is 571 connected by a relay, contacts K108 in the Exhibit No. 2—it doesn't appear in Exhibit No. 2 and Exhibit No. 3—such DC supply to the thyratron or gaseous discharge tube V107 is interrupted through the tube V107, ultimately through the resistor R119 and capacitor arrangement directly across the main electrodes, namely, condenser C121.

The co-joint action of the shunt condenser C121 and the series resistor R119 affectuates the alternate starting

and stopping of the discharge tube V107 during its firing state, namely, when the tube would tend to or want to conduct, it is alternately interrupted by those two elements I just stated, C121 and R119, which, incidentally, is done in a manner to also create a pulse signal through transformer T101 primary, which in turn actuates the upper portion of the circuit Fig. G-1 as the Government witness yesterday very clearly and ably set forth.

Q. Do you find an auxiliary electrode within said device? A. Yes, the auxiliary electrode is the grid structure adjacent the cathode in the Exhibit No. 3 and Exhibit No. 2, and as indicated by a dashed line connected to Terminal 1 of tube V107.

Q. Do you find said input circuit being connected to said auxiliary electrode? A. Yes, the input circuit is connected to the auxiliary electrode, and in Fig. G-2 of Exhibit No. 3 we note from terminal C that the control signal input through appropriate resistors does connect to the grid electrode.

Q. Do you find an electric reactance connected to said auxiliary electrode and to said input circuit to be charged by the controlling currents in said input circuit for producing input potential upon said auxiliary electrode for controlling the electrical discharge of said device? A. Yes, such component is the condenser C112 connected to the auxiliary electrode of tube V107 as well as the input circuit which also connects thereto, and such condenser is charged by the signals in a manner to produce the stated operation which affectuates an electrical discharge of the tube V107 at the proper time.

Mr. Ostrolenk: I have had the witness apply typical claims to different units in actuality from his testimony. The remaining claims which are here involved are applicable to practically all of the devices in about the same manner. It would merely be a matter of duplication to continue upon each claim on each of the calls and I turn him over for cross-examination.

(Opinion of United States Court of Claims)

RADIO PATENTS CORPORATION, PATENTS RESEARCH CORPORATION, RADIO CORPORATION OF AMERICA, and WILLIAM DUBILIER,

v.

UNITED STATES.

No. 50216.

UNITED STATES COURT OF CLAIMS.

Jan. 14, 1959.

LARAMORE, *Judge.*

This is a suit for patent infringement. The Geffcken & Richter patent No. 1,898,046, hereinafter referred to as Geffcken, issued to plaintiff Radio Patents Corporation on February 21, 1933, and is now expired. Plaintiffs contend that claims 2, 7, 11, 15, 16, and 18 of the Geffcken patent have been infringed by certain electronic equipments used by defendant. Defendant contends that the patent claims in suit have not been infringed by the accused equipments and that the claims are not valid.

The subject of the Geffcken patent is "Electric Relay Device for Indicating Weak Currents." In general, this patent describes a cold cathode arc discharge delay device and circuits therefor. The technological principles involved may be briefly summarized as follows. An electrical relay is a device for controlling a flow of electricity in response to some signal. Such relays include various types of electronic tubes operated to control the flow of a current of electrical particles, called electrons, through the tube. Electronic relay tubes may be gas-filled or may be evacuated. Gas-filled tubes contain some gas which when ionized provides a path for the flow of electricity. Such gas-filled

tubes having three electrodes are commonly known as thyratrons. Evacuated electron tubes generally include thermionic means, such as a heated filament, to emit electrons which provide the path for the flow of electricity through the tube. An arc discharge is a luminous bow of light between two electrodes and passes a relatively high value of electric current at low voltages. A glow discharge is a luminous glow or haze between two electrodes and passes minute values of electric current at relatively high voltages.

Plaintiffs contend that the Geffken invention comprised the using of a cold cathode and an external circuit which makes the cold cathode arc. Plaintiffs contend that such a system revolutionized the thyratron art. The several patent claims upon which plaintiffs rely define the precise scope of the alleged invention. It is the claim language which we must first consider. The claims in suit are set forth in full in the accompanying findings. Claim 2 recites an arc-electrical relay device comprising a gas discharge tube, solid cathode and anode electrodes, and an auxiliary electrode between the main electrodes. The claim specifies that the main electrodes are connected to a source of energy too low to produce ionization and discharge, and also specifies means to impose an auxiliary potential on the auxiliary electrode and further means to impose a controlling potential on the auxiliary electrode, the latter controlling potential resulting in ionization and in arc discharge between the auxiliary electrode and the cathode which initiates a discharge between the main electrodes. Claim 7 is generally similar to claim 2 and recites that the tube is glass and the electrodes fixed. Claim 7 does not specify an arc device but defines a device for switching considerable current which seems to us to imply an arc discharge type of device. Claim 15 is also similar to claim 2 and recites a vessel filled with a uniform gaseous atmosphere. Claims 11, 16, and 18 recite electrical systems including input and output circuits. Claim 11 recites that the system includes high ohmic re-

sistance in series with the main electrodes and a condenser in parallel with said electrodes. Claim 16 includes a reactance associated with the input circuit. Claim 18 adds potential means in the output circuit for alternately starting and stopping the electrical discharge.

Although plaintiffs urge that Geffcken relates to an electrical switch which turns current on and off, our consideration of the claim language indicates that the alleged invention is not that simple. The claim language is specific in pointing out the metes and bounds of the patent grant, and may not be broadened to cover a variety of different devices and systems used by defendant.

The accused thyratron controller used by defendant's Department of the Air Force and illustrated diagrammatically in General Electric wiring diagrams, plaintiffs' exhibits 2 and 3, is a complex circuit of apparatus for automatically controlling the azimuth and elevation of a turret in response to applied error signals. The thyratrons *V107-V112* used therein are gas-filled tubes each having an anode, two grids, a cathode and a separate thermionic filament. Plaintiffs urge that use of tube *V107* and its associated circuits infringes Geffcken claim 18. This claim specifically recites a potential means in the output circuit for alternately starting and stopping the electric discharge in said device and recites an electric reactance connected to the auxiliary electrode and to the input circuit to be charged. The accused controller is complex in that it utilizes a three-phase alternating current supply for producing rotation of azimuth and elevation motors in both directions of rotation. We are not able to find any basis for departing from our trial commissioner's finding that this controller circuit does not respond to the specific recital of claim 18, and likewise does not respond to the recital of other claims in suit. We note that tube *V107*, as well as numerous other thyratrons in the controller circuit, utilizes thermionic filaments in some instances as the tube cathode and in others the filament is separate from the cathode. In either case, it appears that a hot filament serves as an emit-

ter of electrons and provides for circuit and tube operation of a character specifically different from the cold cathode type of operation disclosed by Geffcken and stressed by plaintiffs.

The accused Rawin elevation drive motor control circuit, plaintiffs' exhibit 5, used by defendant's Department of the Army, includes type *3C22* thyratrons and associated circuitry. These tubes contain a mixture of an inert gas and mercury, and each tube has an anode, a control grid, and a filamentary thermionic cathode. Plaintiffs urge that use of such a tube and its circuit infringes Geffcken claim 15 which recites, among other limitations, that the tube (vessel) is filled with a uniform gaseous atmosphere. While the Geffcken specification is silent as to the intended meaning of uniform gaseous atmosphere, we note that counsel in presenting this claim to the Patent Office argued that it is essential that the gaseous condition within the tube remain absolutely stable and uniform and that such operation cannot be obtained with mercury pool cathodes. We conclude that claim 15 is not infringed by defendant's circuit utilizing thyratrons containing mercury and a hot filamentary cathode. We likewise conclude that the Rawin apparatus does not infringe the other claims in suit.

The accused Auxiliary Control Panel circuit, plaintiffs' exhibit 10, used by defendant's Department of the Navy, includes a relay tube, Western Electric *313CA*, containing a cold cathode, two control electrodes, an anode, and described as a vacuum tube. A vacuum tube is a sealed tube with the contained gas exhausted to a pressure low enough to permit the passage of electric discharges between metallic electrodes therein. Plaintiffs urge that use of the *313CA* tube and its circuit infringes Geffcken claim 2. This claim recites an arc discharge device including an auxiliary electrode between the main electrodes and also recites auxiliary potentials and controlling potentials. Plaintiffs urge that tube *313C.f* is not a vacuum tube of the type disclaimed by plaintiffs at trial. In objections to defend-

ant's requested findings, plaintiffs urged that the characteristics of the *313CA* tube, shown in plaintiffs' exhibit 20 for glow discharge operation, are such that the tube when used in defendant's auxiliary control panel circuit might operate in arc discharge and would need to operate thus only once. It is our opinion that the accused panel circuit with tube *313CA* does not respond to the specific recital of claim 2 in the manner urged by plaintiffs, and likewise does not respond to the specific recitals of the other claims in suit.

[1] In reaching our conclusion that each of the several claims in suit is not infringed by any of the several currently accused thyratron tubes and associated circuits used by defendant, we have not been unmindful of the testimony of plaintiffs' witnesses. Consideration of the statements of all witnesses with respect to operation of the several accused circuits and their component parts convinces us that the accused equipments do not include each and every element and applied potential specified in the claims in suit, and that such apparatus does not function to produce the same results as delineated in the Geffcken patent specification.

[2] In view of the fact that we have concluded that the patent claims in suit have not been infringed by defendant, we need not pass upon the validity of the Geffcken patent. Noting that defendant has urged a number of prior patents and prior publications as invalidating the claims in suit, and has also urged invalidity based on alleged defects in and alleged inoperativeness of the Geffcken application disclosures, we find it unnecessary to consider such issues in our disposal of this litigation.

The petition is dismissed.

It is so ordered.

JONES, Chief Judge, and MADDEN and WHITAKER, Judges, concur.